

ABSTRACT OF THE DISCLOSURE

An improved electrochemical IR calculation and correction system allows for the precise measurement and control of the interfacial voltage drop at an electrode double layer. In an exemplary use of the invention, this improved IR correction ability allows ECMP to be used for precise surface polishing that would otherwise be impractical with ECMP. The system according to an embodiment of the invention comprises a working electrode, a counter electrode, and a reference electrode. An electrical perturbation is applied to the system and a unique IR calculation circuit is used to determine the IR drop. In an embodiment of the invention applicable to ECMP, an IR correction is provided such that the polishing at the surface of interest is precisely controlled despite the IR drop in the system.